

## ABSTRACT

[0056] The invention relates to a spectral photometry method for determining the oxygen saturation of the blood in optically accessible blood vessels, by determining the intensity of the reflection of the blood vessels and of their environment that is devoid of vessels, using at least two spectrally diverse images. The aim of the invention is to reduce the stress on the patient during the capture of the spectrally diverse images, achieving at the same time an improved signal-to-noise ratio. In addition, the improved method aims to guarantee a clear association of arteries and veins in the images and to deliver more meaningful values for the oxygen saturation. To capture the spectrally diverse images, the blood vessels and their environment are simultaneously illuminated by illumination radiation of at least one measuring wavelength and at least one reference wavelength, each measuring and reference wavelength being tuned to a respective color channel of a color camera that captures the images, in order to be received by said color channel.